(54) HEAT-EXCHANGER FIN MATERIAL
(11) 2-85357 (A) (43) 26.3.1990 (19) JP
(21) Appl. No. 63-233943 (22) 19.9.1988
(71) MATSUSHITA REFRIG CO LTD (72) YOSHIYUKI TSUDA
(51) Int. Cl⁵. C23C14/12//B32B15/08,F28F1/32

PURPOSE: To obtain a heat-exchanger fin material free from standing of condensed water on the surface and having superior efficiency of heat transfer by providing a fluororesin coating layer formed by polymerizing a fluorine monomer source having a specific value of the atomic ratio of F to C.

CONSTITUTION: A fluorine monomer in which atomic ratio of F to C is regulated to ≥ 1.2, such as $C_2H_3F_4$ and CF_4, is subjected to plasmic polymerization on the surface of a fin material of Al, etc., by which a fluororesin coating layer consisting of a polymer film in which carbon fluoride groups increased in fluorine atom density, such as $-CF_3$ and $=CF_2$, are arranged on the surface layer is formed. When the above fin material is used as a fin material for heat exchanger, such as heat pump, even fine drops of condensed water with a diameter as small as about 1mm roll down the fin surface and do not stand on the surface. By this method, the lowering of the thermal efficiency of a heat exchanger can be reduced and the clogging of a fin can be prevented.

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(54) PRESSURE REDUCING DEVICE
(11) 2-85358 (A) (43) 26.3.1990 (19) JP
(21) Appl. No. 63-5389 (22) 13.1.1988 (33) JP (31) 87p.268762 (32) 24.10.1987
(71) TADAHIRO OMI(1) (72) TADAHIRO OMI(1)
(51) Int. Cl⁵. C23C14/22,B01J3/00//H01L21/203,H01L21/205,H01L21/302,H01L21/31

PURPOSE: To reduce the impurities due to gas emitted from an inner surface and to improve corrosion resistance by forming a passive film made of chromium oxide and iron oxide in specified thickness on the surface of stainless steel constituting a pressure reducing device.

CONSTITUTION: The principal part of a pressure reducing device is constituted of stainless steel. A passive film is formed at least in one part of the surface of the above-mentioned stainless steel exposed to the inside of this device. This passive film is constituted of two or more layers of both a layer made of chromium oxide as a main component in the vicinity of the interface with stainless steel and a layer made of iron oxide as the main component in the vicinity of the surface. Further this passive film is formed in ≥ 50 Å thickness and can be formed by heating and oxidizing stainless steel at 150°C or more and less than 400°C. Further when thickness is regulated to ≥ 100 Å, stainless steel is preferably heated and oxidized at 400°C or more and less than 550°C. Thereby gas is prevented from being emitted from the inner surface and a supervacuum and extra-high clean pressure reducing device is obtained and exhibits excellent resistance to corrosion even for chlorine-based etching gas, etc.

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(54) THIN FILM-FORMING EQUIPMENT
(11) 2-85359 (A) (43) 26.3.1990 (19) JP
(21) Appl. No. 63-234816 (22) 21.9.1988
(71) MITSUBISHI ELECTRIC CORP (72) HIROMOTO ITO(2)
(51) Int. Cl⁵. C23C14/32

PURPOSE: To carry out stable vapor deposition even under the condition of high vapor deposition velocity or even in the case of vapor deposition materials with high vapor pressure by heating and evaporating a vapor deposition material in an internal tank provided to the inside of a vacuum tank, ionizing the resulting vapor, accelerating the ions by means of an ion-drawing electrode, and spraying the accelerated ions toward a substrate.

CONSTITUTION: An internal tank 20 having an injection hole 11 opening toward a substrate 2 and also having a liquid N_2 tank 22 on the outside periphery is provided to the inside of a vacuum tank 10 in thin film-forming equipment. A vapor deposition material 3 held in the bottom of the internal tank 20 is heated and evaporated by means of a heating filament 23. Thermions emitted from an ionization filament 21 are allowed to collide with the above vapor to ionize a part of the vapor. The ions of this vapor are accelerated by means of an ion-drawing electrode 24 provided to the vicinity of the injection hole 11. The accelerated ions are blown out together with neutral vapor toward the substrate 2, by which a thin film is formed on the substrate 2. Since the vapor of the vapor deposition material 3 can be blown out from the state where the internal tank 20 is filled with the above vapor, stable vapor deposition can be carried out even under the condition of high vapor deposition velocity or even when a vapor deposition material with high vapor pressure is used at low temp.